SOILS REPORT

on the

Subsurface Soil Conditions

at the proposed Septic Drainfield Site

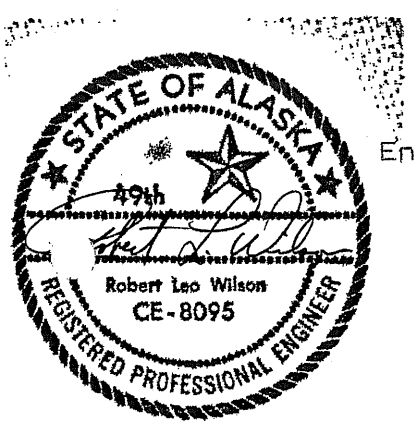
Takotna, Alaska

Prepared for

Alaska Area Native Health Service
Environmental Health and Engineering Branch
222 W. 8th Avenue #65
Anchorage, Alaska 99513-7561

includes Laboratory Test Results performed by

A.W. Murfitt Company, Inc.
Arctic Civil and Geotechnical Engineering Consultants
13810 Venus Way
Anchorage, Alaska 99515



Prepared by
Timothy K. Edwards
Design Engineer
Alaska Area Native Health Service
Environmental Health and Engineering Branch

August 29, 1991

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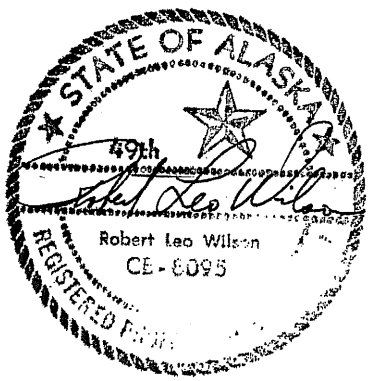


INTRODUCTION

This report presents the results of an investigation of subsurface soil conditions at the site of a proposed septic drainfield in Takotna, Alaska. The completed soils investigation work consisted of digging a total of three (3) test pits, obtaining two (2) soil samples from each test pit, performing laboratory testing on samples taken from the test pits, and preparing a formal engineering report documenting the findings.

The recommendation and other considerations presented in this report have been developed from the test pit digging and the laboratory testing performed by A.W. Murfitt Company, Inc. on the samples that were collected in the field.

FIELD INVESTIGATION

Subsurface soil conditions were evaluated at the proposed septic drainfield site on July 23, 1991. A total of three (3) test pits were dug. These test pits were dug at the proposed location of the septic drainfield and are at the locations shown on the Site Plan, attached in the Appendix of this report. The test pits were dug with a backhoe that is owned by the Village of Takotna. The test pits were approximately three feet wide and were dug to a depth of approximately seven feet below the natural ground surface. The excavation work was performed by Mr. Dick Newton, Village of Takotna equipment operator, and Tim Edwards performed the field evaluation.

Samples were collected from the sidewalls of the test pits. Samples collected in the field were transported back to Anchorage and sent to A. W. Murfitt Company, Inc. for testing and examination. Laboratory testing consisted of sieve and hydrometer analysis, frost classification, percent organics and permeability. The test results are discussed in the "Results of Field Investigations and Laboratory Testing" section of this report.

BACKGROUND INFORMATION ON THE SITE

The village of Takotna is located on the north bank of the Takotna River 14 miles west of McGrath and approximately 240 miles northwest of Anchorage, in the Kilbuck-Kuskokwim Mountains.

The village is elevated about 30 feet above the mean level of the Takotna River and is about 150 feet from its shoreline. Gold Run Creek, the village water source, flows into the Takotna River about 250 feet west (upstream) of the village.

The region's climate is continental, characterized by short, hot summers, and long, cold winters. Temperature extremes range from -64F to 90F. The mean annual temperature for Takotna is 25.2 F. The mean annual precipitation is 16 inches and the mean annual snowfall is 75 inches.

The area has moderate to thin layers of permafrost, generally found under any thick vegetative mat.

Soils in the area are generally well drained alluvial deposits of silt and sand. The vegetation in the area include birch and spruce trees and tall grasses. Underlying deposits are largely greywacke and shale.

The proposed septic drainfield site is located in an area that has been cleared of most forest leaf litter/PEAT (PT)/ organic mat.

FINDINGS AT THE SITE

The subsurface soils in the proposed septage drainfield site generally consists of a layer of sandy silt 2.5 ft to 4 ft below the ground surface. This in turn is underlain by a 3 inch to 5 inch reddish grey clay. The next deepest soil profile identified was a 3 ft to 4 ft layer of SANDY GRAVEL (GP).

No groundwater was encountered in any of the test pits, and there was no mottling or other evidence of a seasonally high water table.

RESULTS OF FIELD INVESTIGATIONS AND LABORATORY TESTING

The results of the laboratory testing conducted for this investigation are shown on the Laboratory Test Results, all of which are contained in the appendix of this report.

The samples were classified (according to the Unified Soil Classification System) in the laboratory.

Natural soil moisture contents in the SILT (ML) ranged from 28.2% to 54.5%.

Natural soil moisture contents in the SANDY GRAVEL (GP) ranged from 5.4% to 14.3%.

The organic contents in the SILT (ML) ranged from 11.6% to 25.4%.

The organic contents in the SANDY GRAVEL (GP) ranged from 11.5% to 1.4%.

The permeability test data showed that the SILT (ML) has a permeability ranging from 1.6 x 10^-5 cm/sec to 5.0 x 10^-5 cm/sec.

The permeability test data showed that the SANDY GRAVEL (GP) ranged from 6.5 x 10^-4 cm/sec to 1.3 x 10^-2 cm/sec.

RECOMMENDATIONS, CONCLUSIONS, AND OTHER CONSIDERATIONS

Based on the results of the excavation of the soil test pits, the in-situ soils investigation, and subsequent laboratory testing of soils samples; it is felt that the soil characteristics of the proposed septage disposal site will support the design and construction of a septic drainfield consisting of standard infiltrators at a 0% slope and at a depth of 4 ft minimum ground cover.

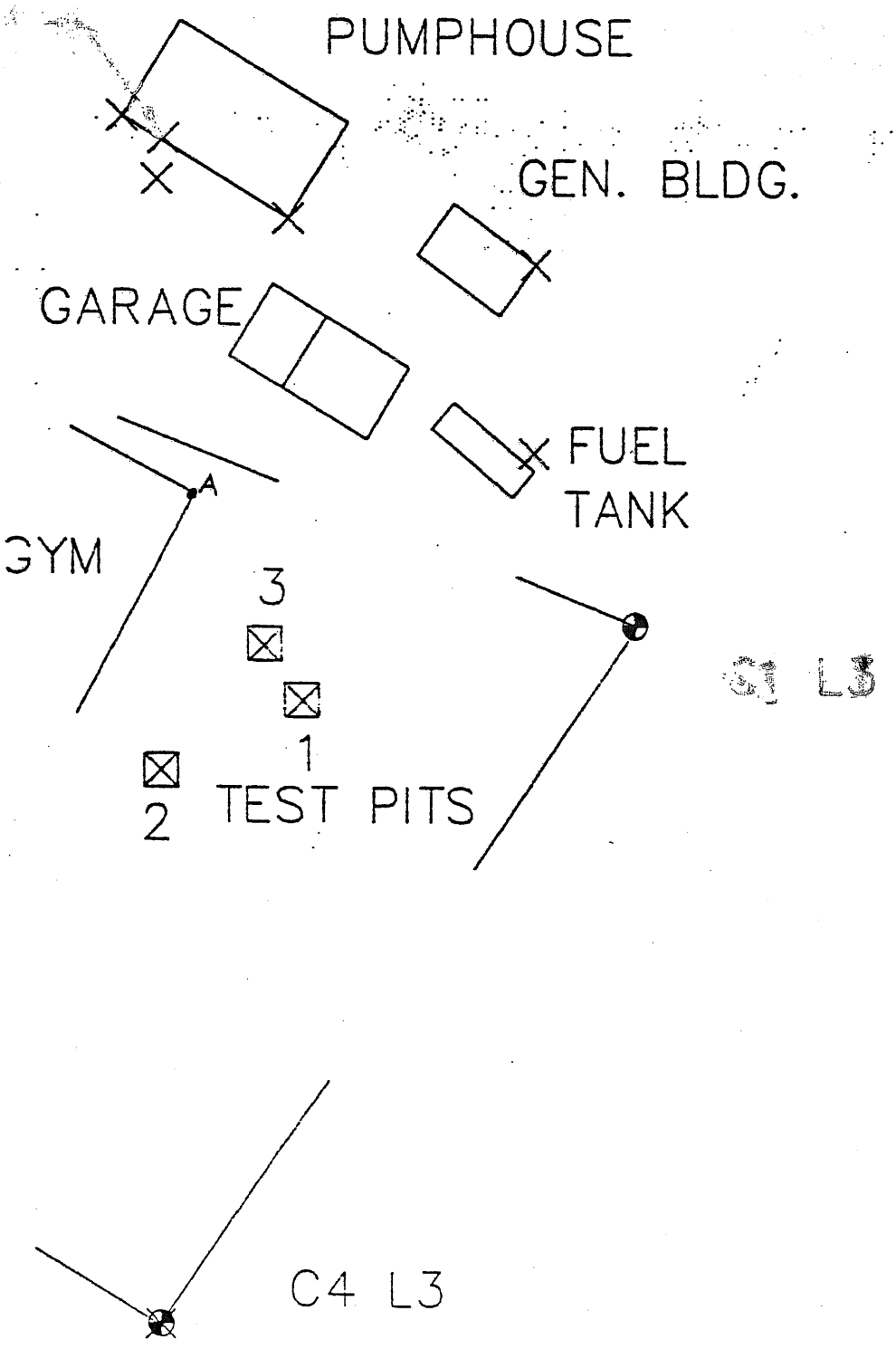
The chosen site for the proposed septic drainfield is down gradient of the new water intake point on Gold Run Creek. This water intake point is the only water intake that serves the entire community. There is one known private well down gradient of the proposed septic drainfield located approximately 400 ft away.

The soil in the area of the site of the proposed drainfield consists of a predominantly SANDY GRAVEL (GP) stratum below the 4 ft depth of the septic drainfield. This SANDY GRAVEL (GP) stratum has relatively high permeabilities (as listed in the "Results of Field Investigations and Laboratory Testing") which makes this site highly suitable for a septic system drainfield.

The proposed septic system drainfield site is located in an area that has been previously cleared of all surface vegetation. The site has also been previously leveled. The absence of permafrost makes this site highly suitable.

It is therefore concluded that this proposed septic drainfield site is a good location which meets the necessary siting criteria.

Site Plan: Test Pit Locations

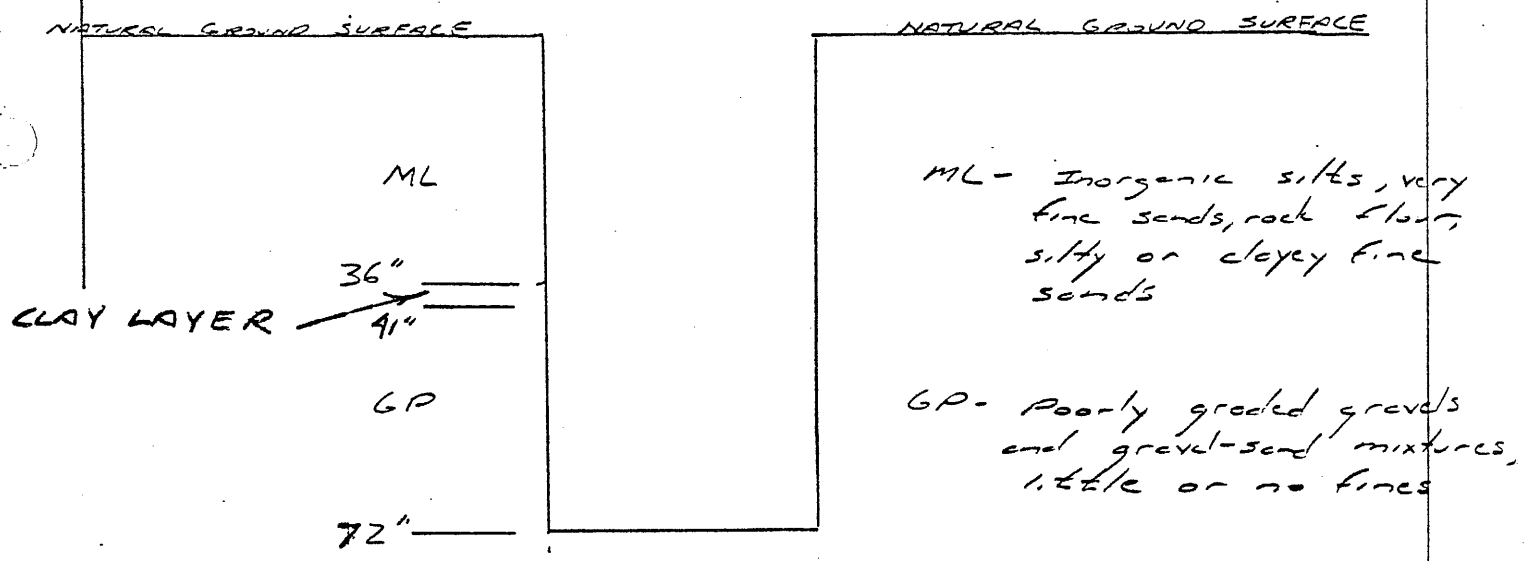


TAKOTNA, ALASKA

proposed septic drainfield

TEST PIT #1

July 23, 1991



ML - Inorganic silts, very fine sands, rock flour, silty or clayey fine sands

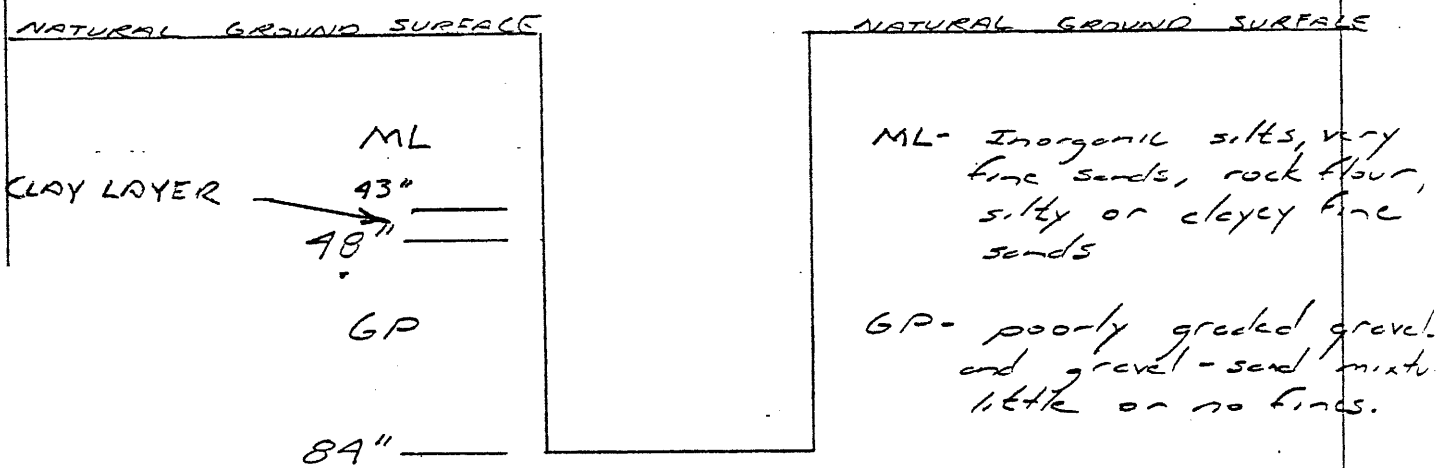
GP - Poorly graded gravels and gravel-sand mixtures, little or no fines

TAKOTNA, ALASKA

proposed septic drainfield

TEST PIT #2

July 23, 1991



ML- Inorganic silts, very fine sands, rock flour, silty or clayey fine sands

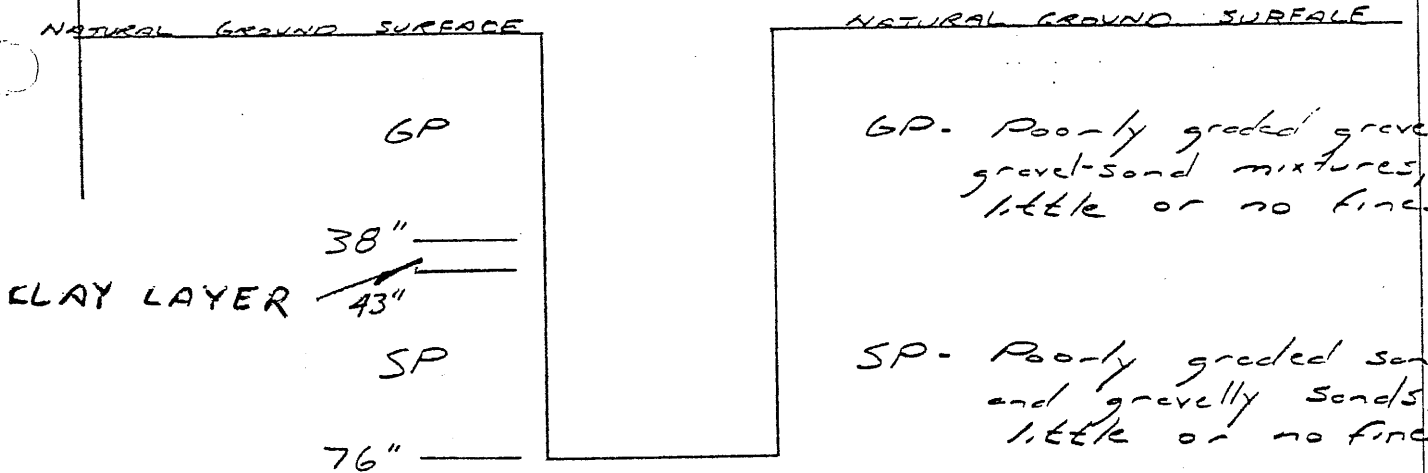
GP- poorly graded gravel and gravel-sand mixtures little or no fines.

TAKOTNA, ALASKA

proposed septic drainfield

TEST PIT #3

July 23, 1991



GRAIN SIZE DISTRIBUTION

PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

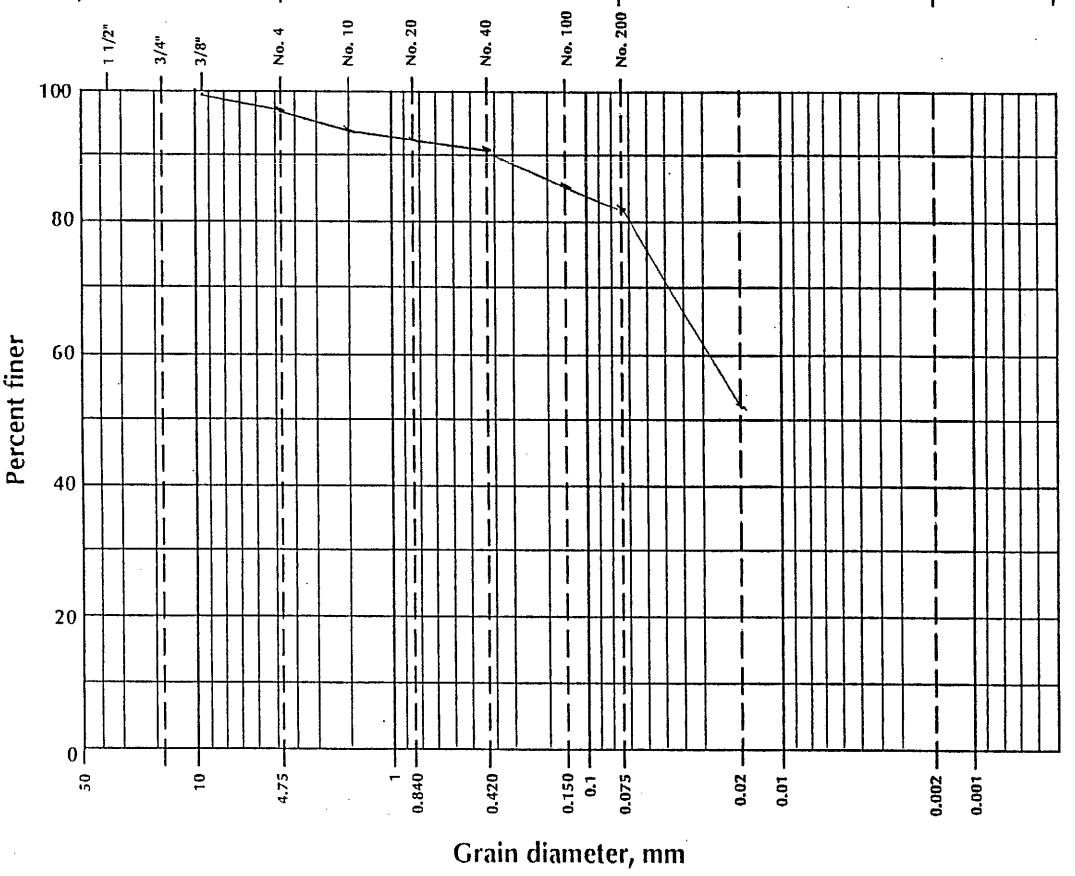
LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 1

SAMPLE NO. 1-1 DEPTH OF SAMPLE 3 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
2.8	15.5		81.7	

U.S. standard sieve sizes



SOIL DESCRIPTION 28.2 % Natual Moisture, 52.0 % -0.02 mm., 11.6 % Organics

Permeability, k= 1.6 x 10^{-5} cm/sec.

SOIL CLASSIFICATION SILT (ML) with SAND, F-4.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

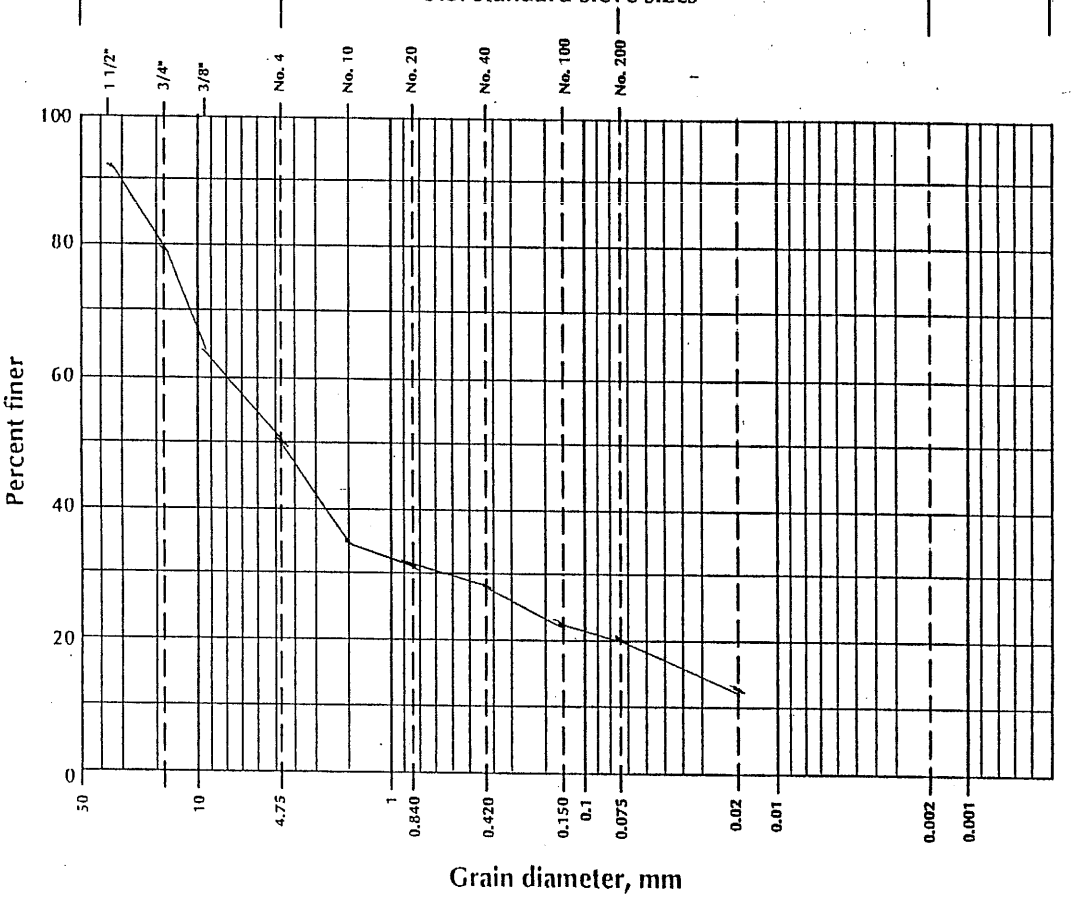
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 1

SAMPLE NO. 1-2 DEPTH OF SAMPLE 6 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
50.0	29.7		20.3	



SOIL DESCRIPTION 14.3 % Natual Moisture, 12.6 % -0.02 mm., 7.9 % Organics

Permeability, k= 6.5 x 10^{-4} cm/sec.

SOIL CLASSIFICATION SANDY GRAVEL (GP) with SILT, F-2.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

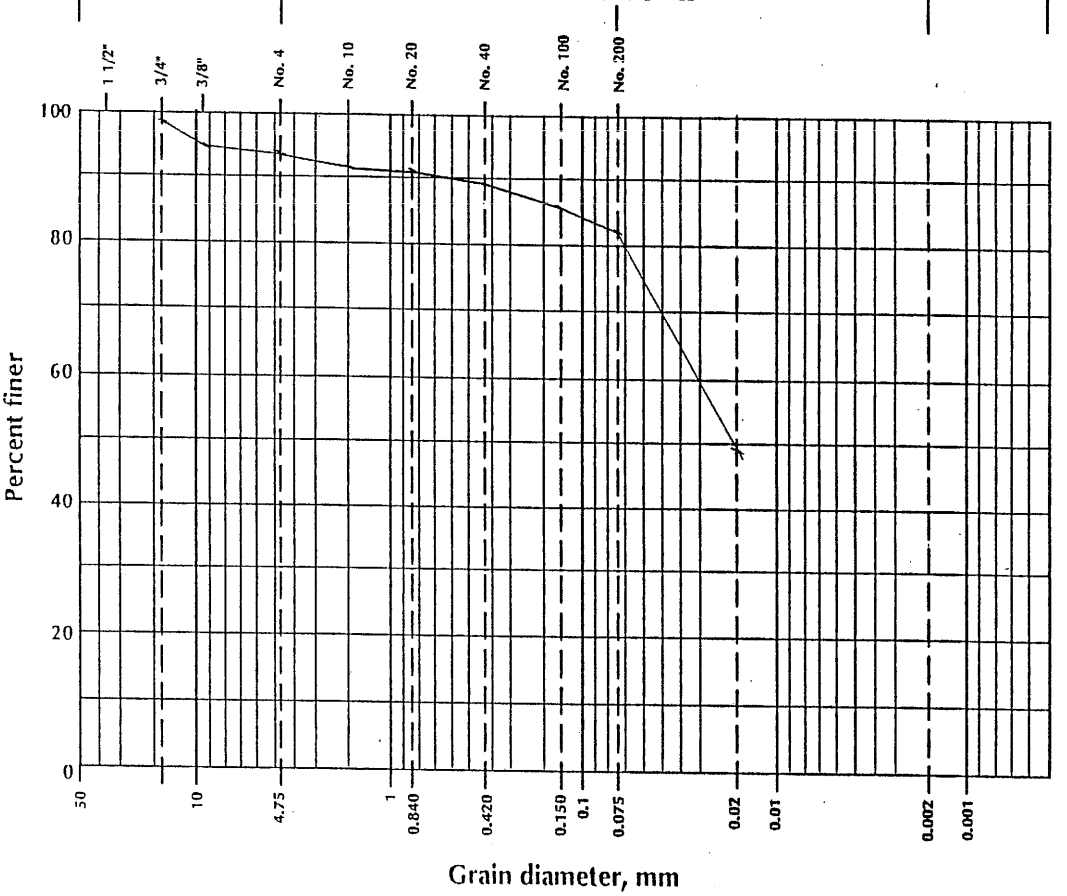
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 2

SAMPLE NO. 2-1 DEPTH OF SAMPLE 4 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
5.3	13.0		81.7	



SOIL DESCRIPTION 54.5 % Natual Moisture, 49.1% -0.02 mm.,25.4 % Organics

Permeability, k= 5.0×10^{-5} cm/sec.

SOIL CLASSIFICATION SILT (ML), trace SAND and GRAVEL, F-4.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

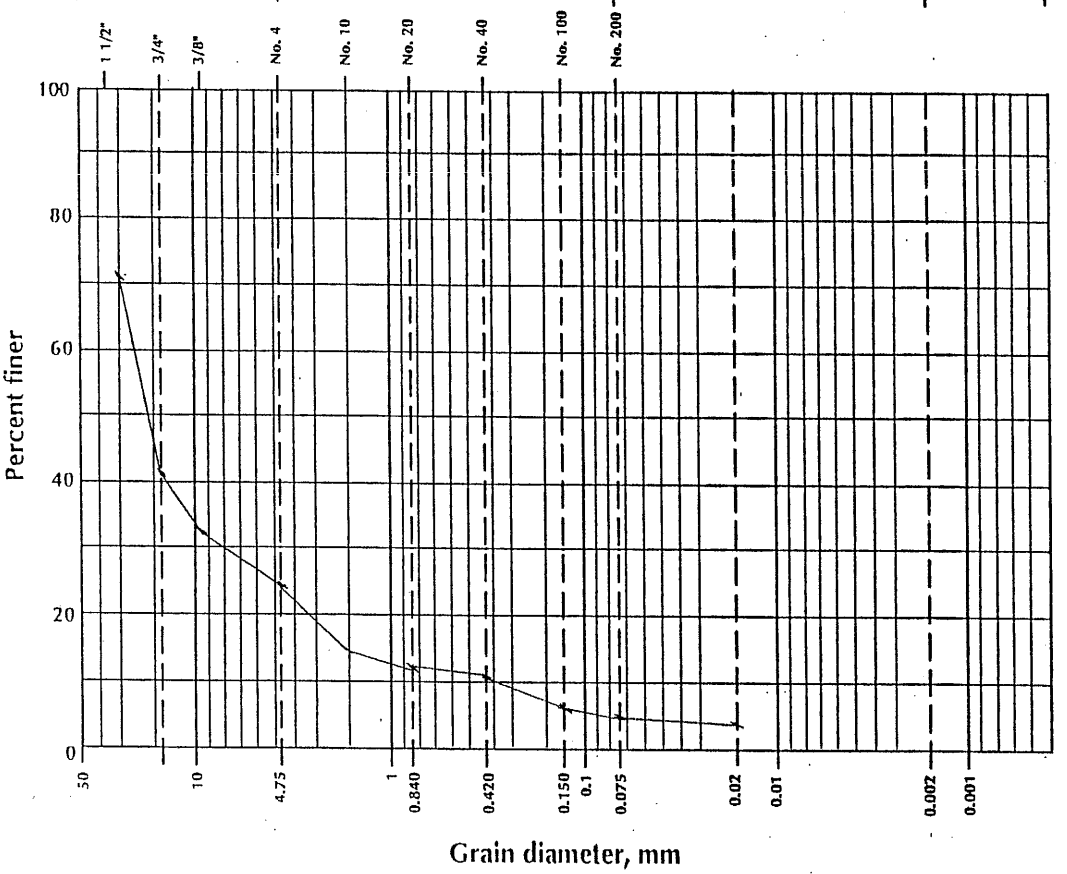
LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 2

SAMPLE NO. 2-2 DEPTH OF SAMPLE 7 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
75.5	19.0		5.5	

U.S. standard sieve sizes



SOIL DESCRIPTION 5.4 % Natual Moisture, 3.3 % -0.02 mm., 1.4% Organics

Permeability, k= 1.3 X 10^{-2} cm/sec.

SOIL CLASSIFICATION GRAVEL (GP) with SAND, trace SILT, F-1.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

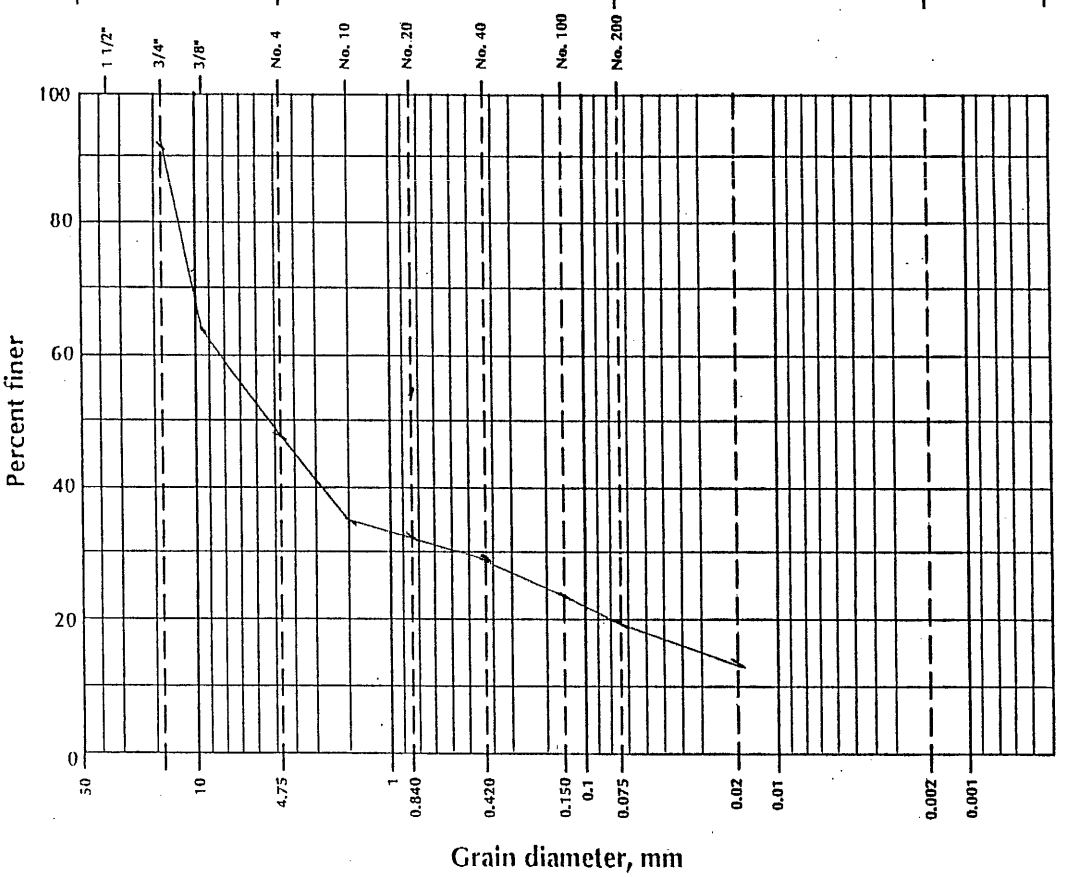
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 3

SAMPLE NO. 3-1 DEPTH OF SAMPLE 3 Ft. 2 In.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
52.4	27.8		19.8	



SOIL DESCRIPTION 14.2% Natual Moisture, 13.5% -0.02 mm., 11.5% Organics

Permeability, k= 1.8 X 10^{-3} cm/sec.

SOIL CLASSIFICATION SANDY GRAVEL (GP) with SILT, F-2.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

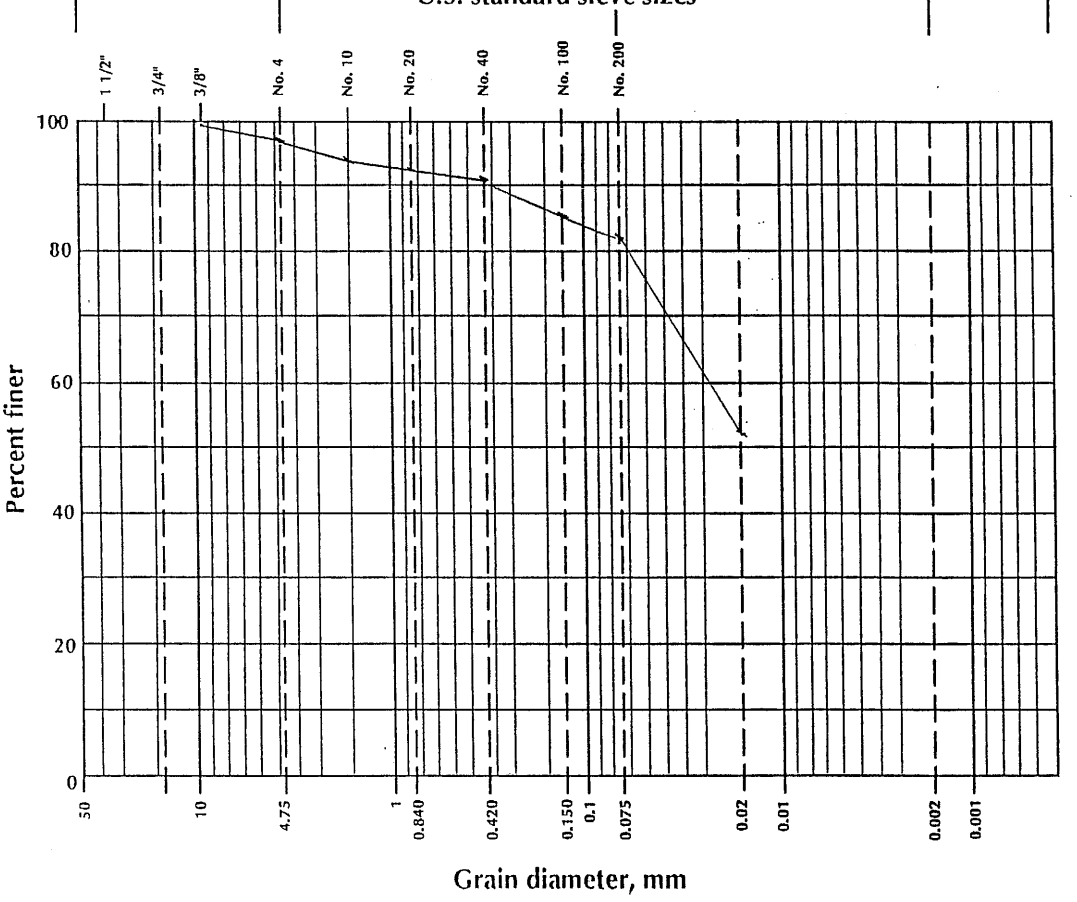
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 1

SAMPLE NO. 1-1 DEPTH OF SAMPLE 3 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
2.8	15.5		81.7	



SOIL DESCRIPTION 28.2 % Natual Moisture,52.0 % -0.02 mm.,11.6 % Organics

Permeability, k= 1.6 x 10^{-5} cm/sec.

SOIL CLASSIFICATION SILT (ML) with SAND, F-4.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

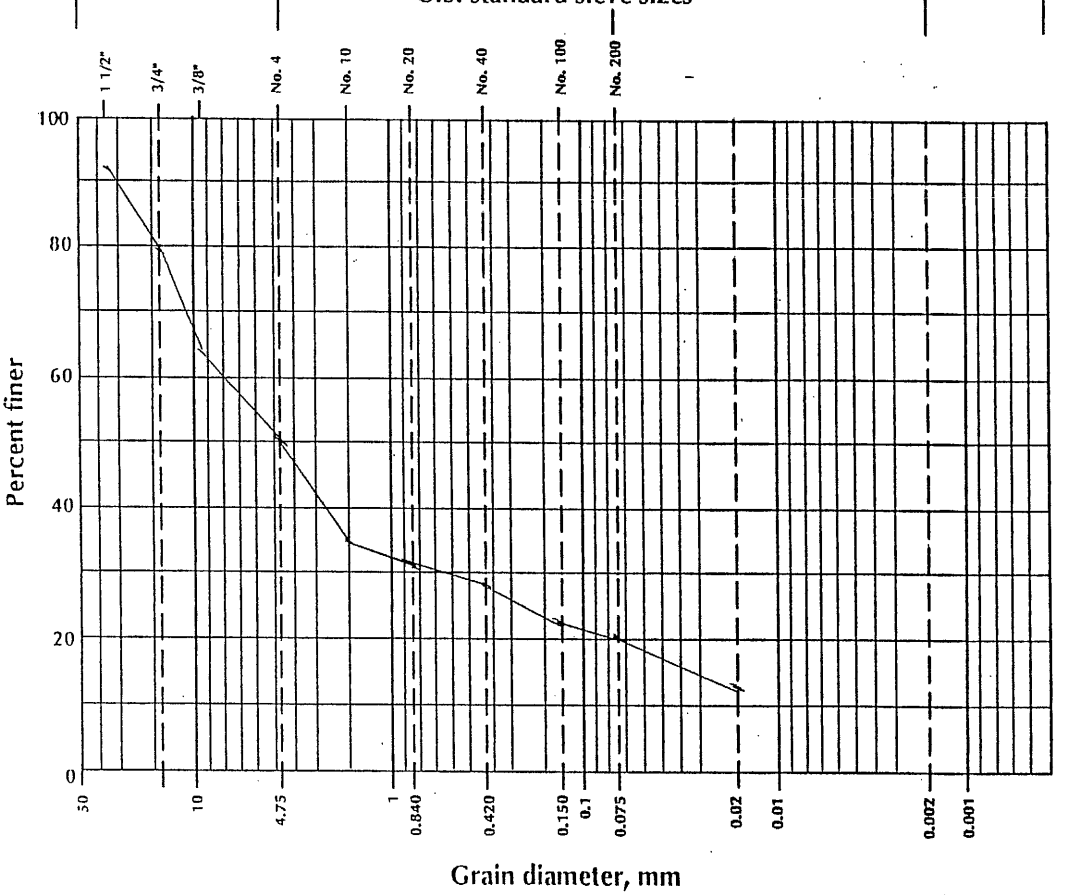
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 1

SAMPLE NO. 1-2 DEPTH OF SAMPLE 6 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
50.0	29.7		20.3	



SOIL DESCRIPTION 14.3 % Natual Moisture, 12.6 % -0.02 mm., 7.9 % Organics

Permeability, k= 6.5 x 10^{-4} cm/sec.

SOIL CLASSIFICATION SANDY GRAVEL (GP) with SILT, F-2.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

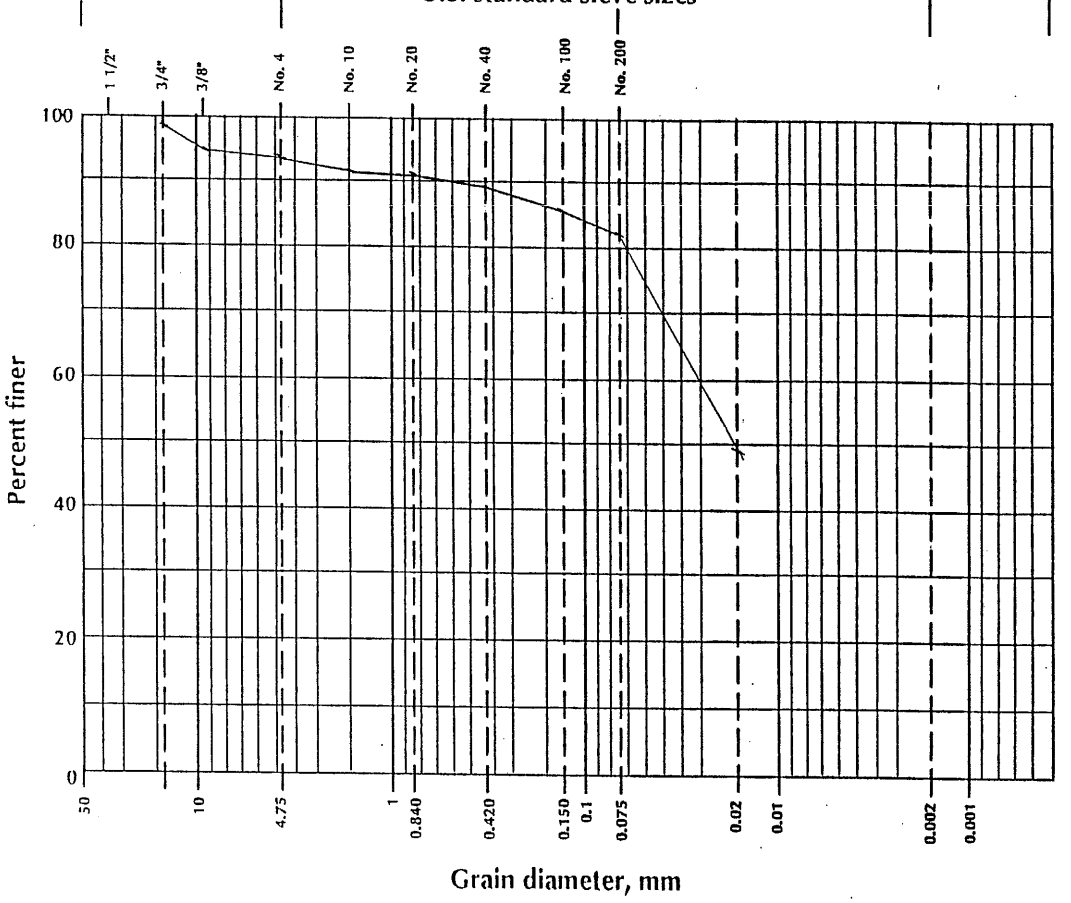
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 2

SAMPLE NO. 2-1 DEPTH OF SAMPLE 4 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
5.3	13.0		81.7	



SOIL DESCRIPTION 54.5 % Natual Moisture, 49.1% -0.02 mm., 25.4 % Organics

Permeability, k= 5.0×10^{-5} cm/sec.

SOIL CLASSIFICATION SILT (ML), trace SAND and GRAVEL, F-4.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

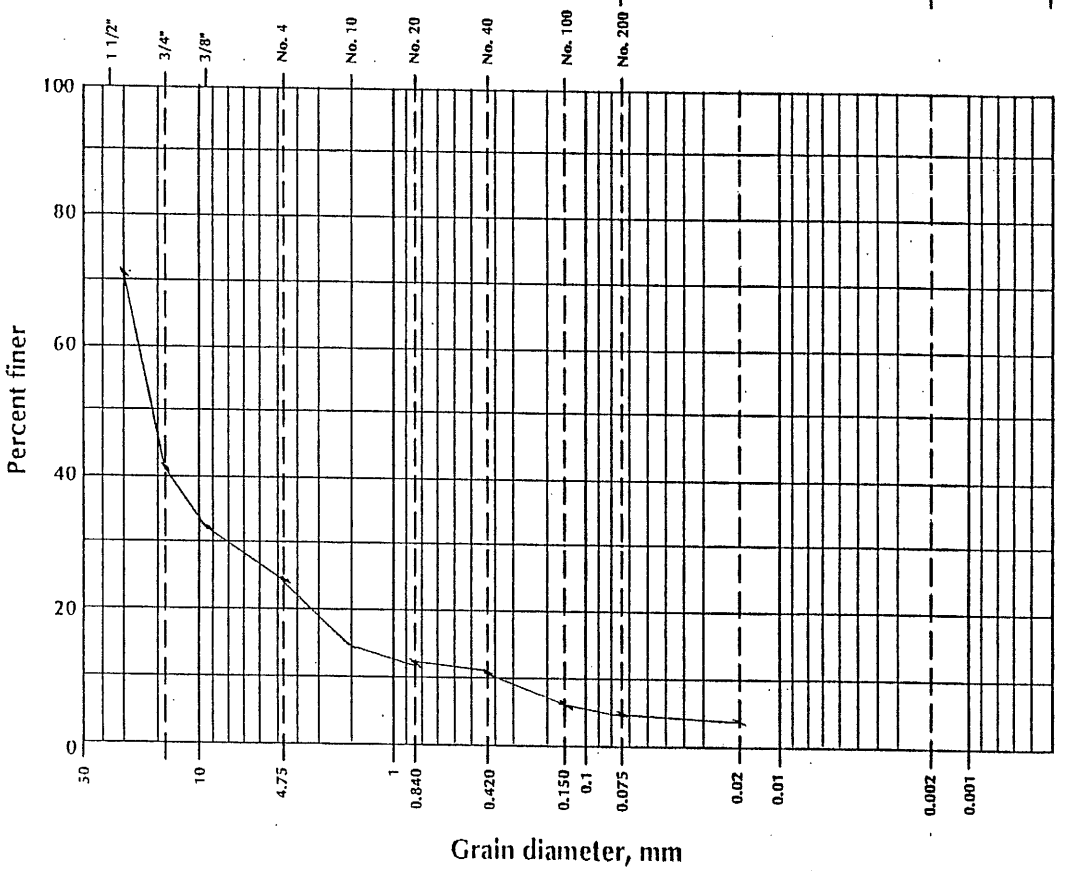
LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 2

SAMPLE NO. 2-2 DEPTH OF SAMPLE 7 Ft.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
75.5	19.0		5.5	

U.S. standard sieve sizes



SOIL DESCRIPTION 5.4 % Natual Moisture, 3.3 % -0.02 mm., 1.4% Organics

Permeability, k= 1.3 X 10^{-2} cm/sec.

SOIL CLASSIFICATION GRAVEL (GP) with SAND, trace SILT, F-1.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

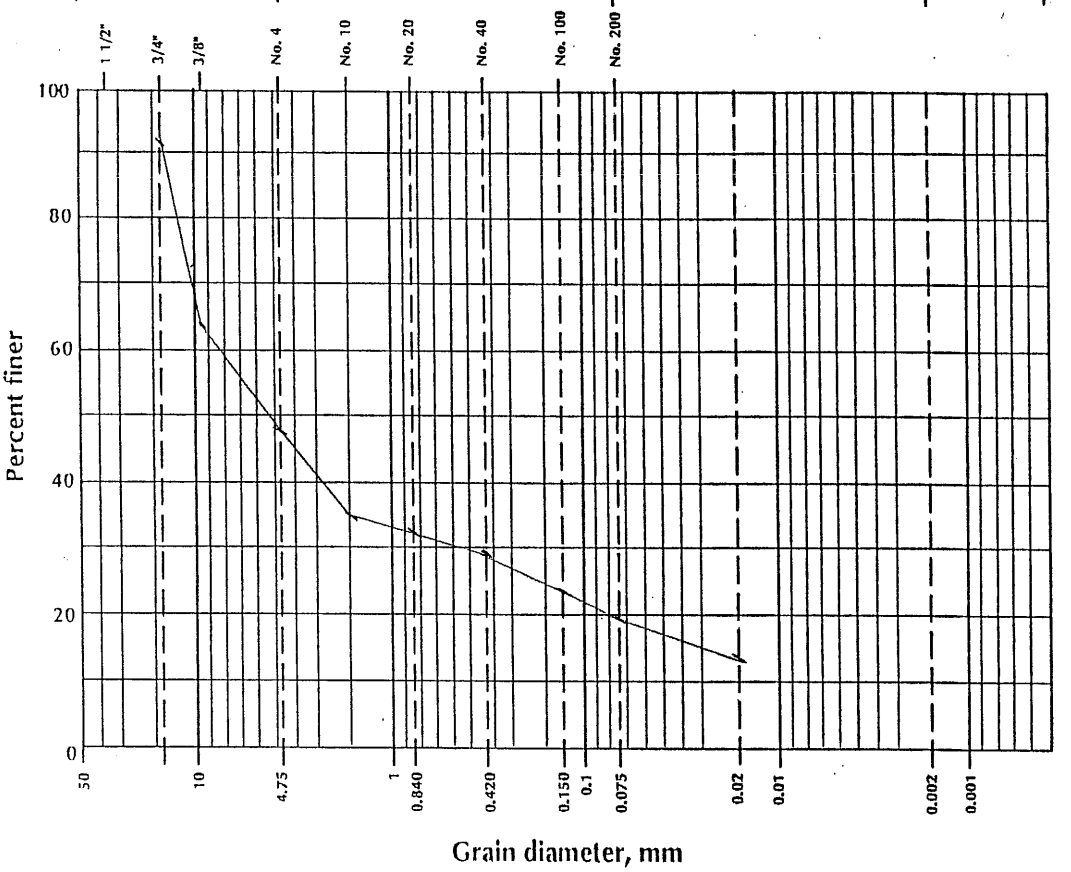
LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 3

SAMPLE NO. 3-1 DEPTH OF SAMPLE 3 Ft. 2 In.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
52.4	27.8		19.8	

U.S. standard sieve sizes



SOIL DESCRIPTION 14.2% Natual Moisture, 13.5% -0.02 mm., 11.5% Organics

Permeability, k= 1.8 X 10^{-3} cm/sec.

SOIL CLASSIFICATION SANDY GRAVEL (GP) with SILT, F-2.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

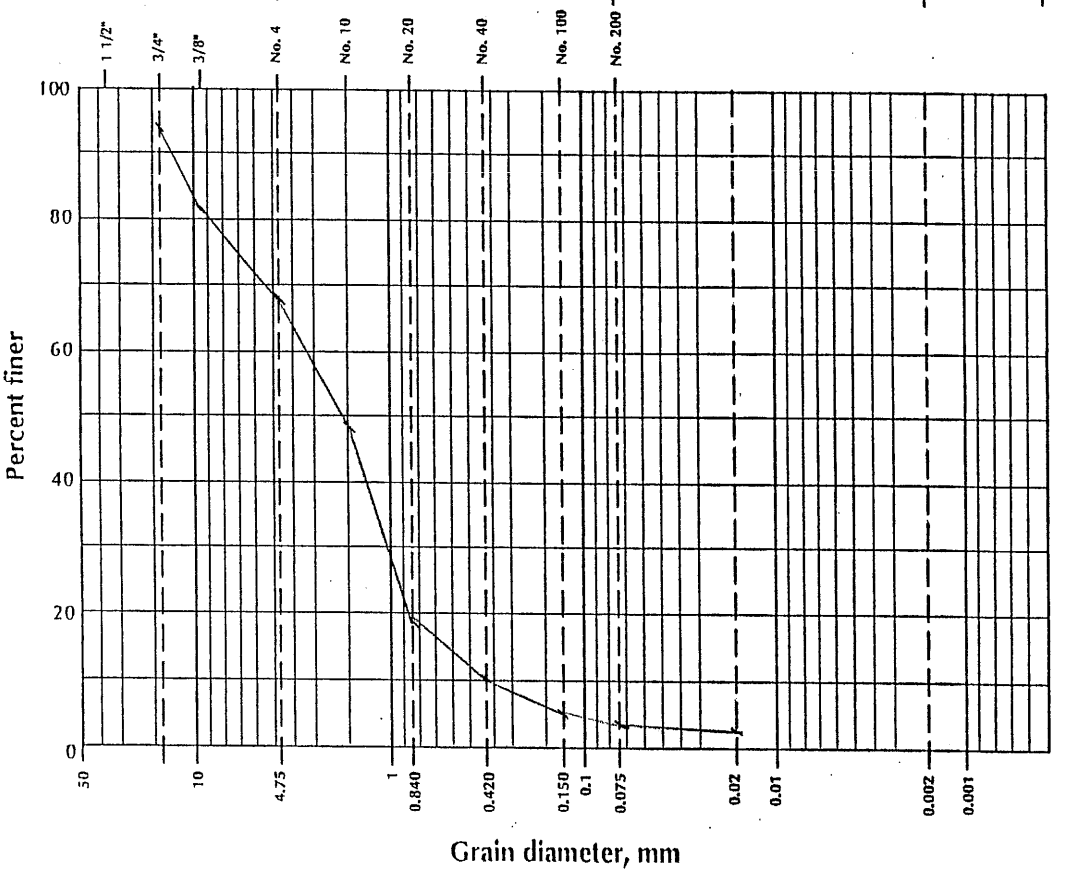
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 3

SAMPLE NO. 3-2 DEPTH OF SAMPLE 6 Ft. 4In.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
31.6	64.3		4.1	



SOIL DESCRIPTION 6.4 % Natual Moisture, 3.0 % -0.02 mm., 9.0 % Organics

Permeability, k= 2.8 X 10^{-2} cm/sec.

SOIL CLASSIFICATION GRAVELLY SAND (SP) trace SILT, F-1.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

GRAIN SIZE DISTRIBUTION

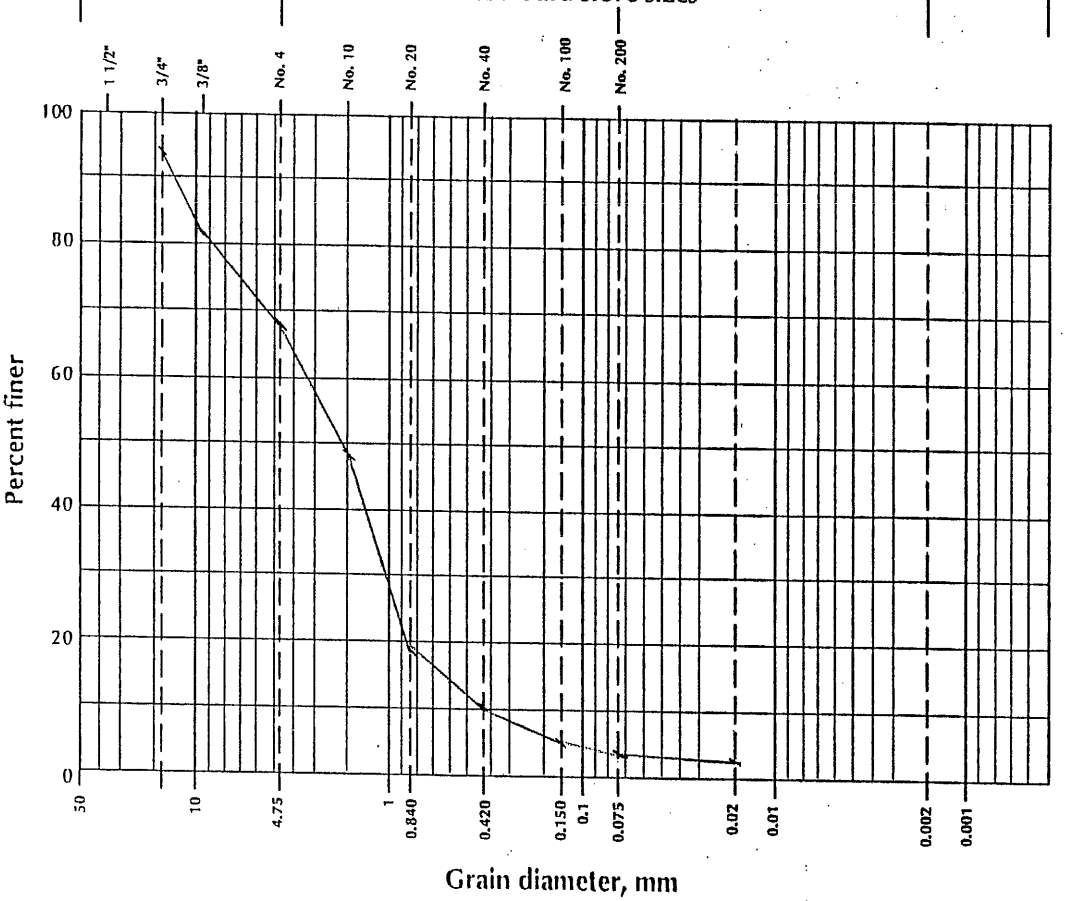
PROJECT Public Health Service, Takotna, AK JOB. NO. 91-202.13

LOCATION OF PROJECT Takotna, Alaska BORING / TEST PIT NO. 3

SAMPLE NO. 3-2 DEPTH OF SAMPLE 6 Ft. 4In.

TESTED BY JDR/AWM DATE OF TESTING 7/27 to 8/16/91

GRAVEL	SAND		SILT	CLAY
	COURSE TO MEDIUM	FINE		
PERCENTAGES				
31.6	64.3		4.1	



SOIL DESCRIPTION 6.4 % Natual Moisture, 3.0 % -0.02 mm., 9.0 % Organics

Permeability, k= 2.8 X 10^{-2} cm/sec.

SOIL CLASSIFICATION GRAVELLY SAND (SP) trace SILT, F-1.

A.W. Murfitt Company CONSULTING ENGINEERS & TESTING	OTHER TESTS	PLATE

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☒ SOILS LOG

☒ PERCOLATION TEST

SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

LEGAL DESCRIPTION: Lot 1 Test Pit 1 (TP 1)

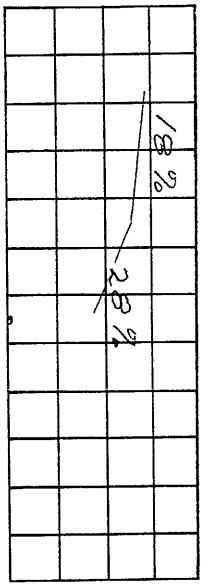
DEPTH (FEET)

OL Brown ORGANIC SILT

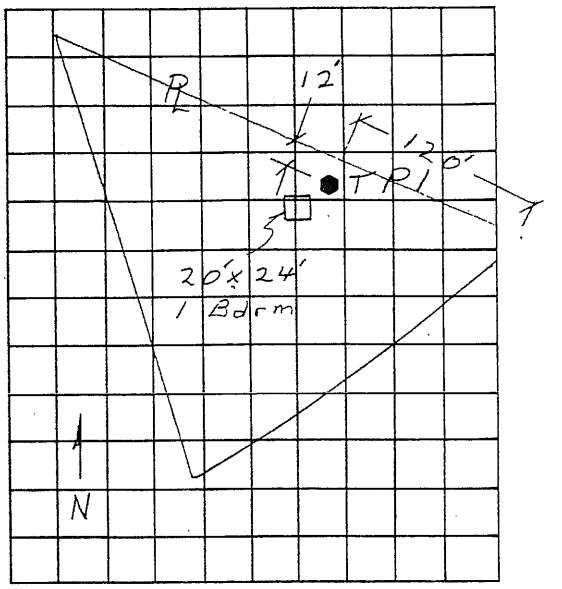
GP/GM Brown GRAVEL with cobbles, (weathered, fractured shale) damp, dense, angular

Bot of TP=8'

SLOPE



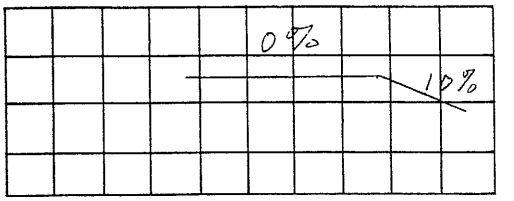
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
1	8-2-89	5:10	0	5.12"	0 "
2		5:20	10	5.5 "	0.37"
3		5:30	10	5.75"	0.25"
4		5:40	10	6.12"	0.37"
5		5:50	10	6.37"	0.25"
6		6:00	10	6.62"	0.25"
7		6:10	10	6.87"	0.25"

PERCOLATION RATE 40 (minutes/inch)

TEST RUN BETWEEN 2 1/2 FT AND 3 FT

COMMENTS Test pit located east of woodshed. Recommend drainfield be located west of the woodshed.

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: Mark Holum DATE: 8-15-89

Figure 4

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☒ SOILS LOG

☐ PERCOLATION TEST

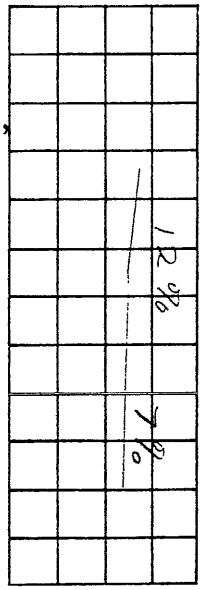
SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

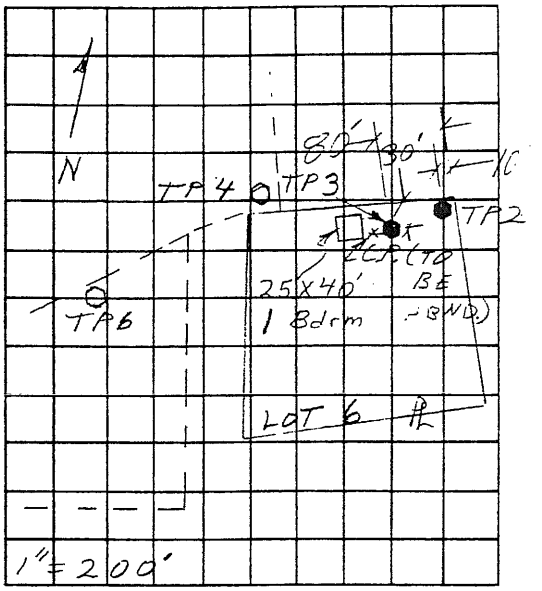
LEGAL DESCRIPTION: Lot 6 Test Pit 2 (TP 2)

DEPTH (FEET)		
1	GM	Brown SILTY GRAVEL, damp
2	ML	Brown SILT w/ occ. gravel, damp, medium stiff, low to med. plasticity
3		
4		
5		
6		Bot of TP=6'
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

SLOPE



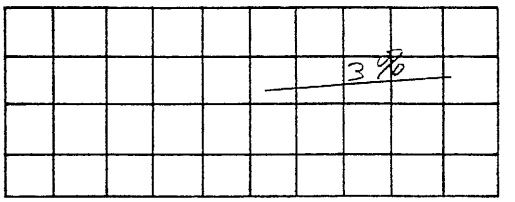
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop

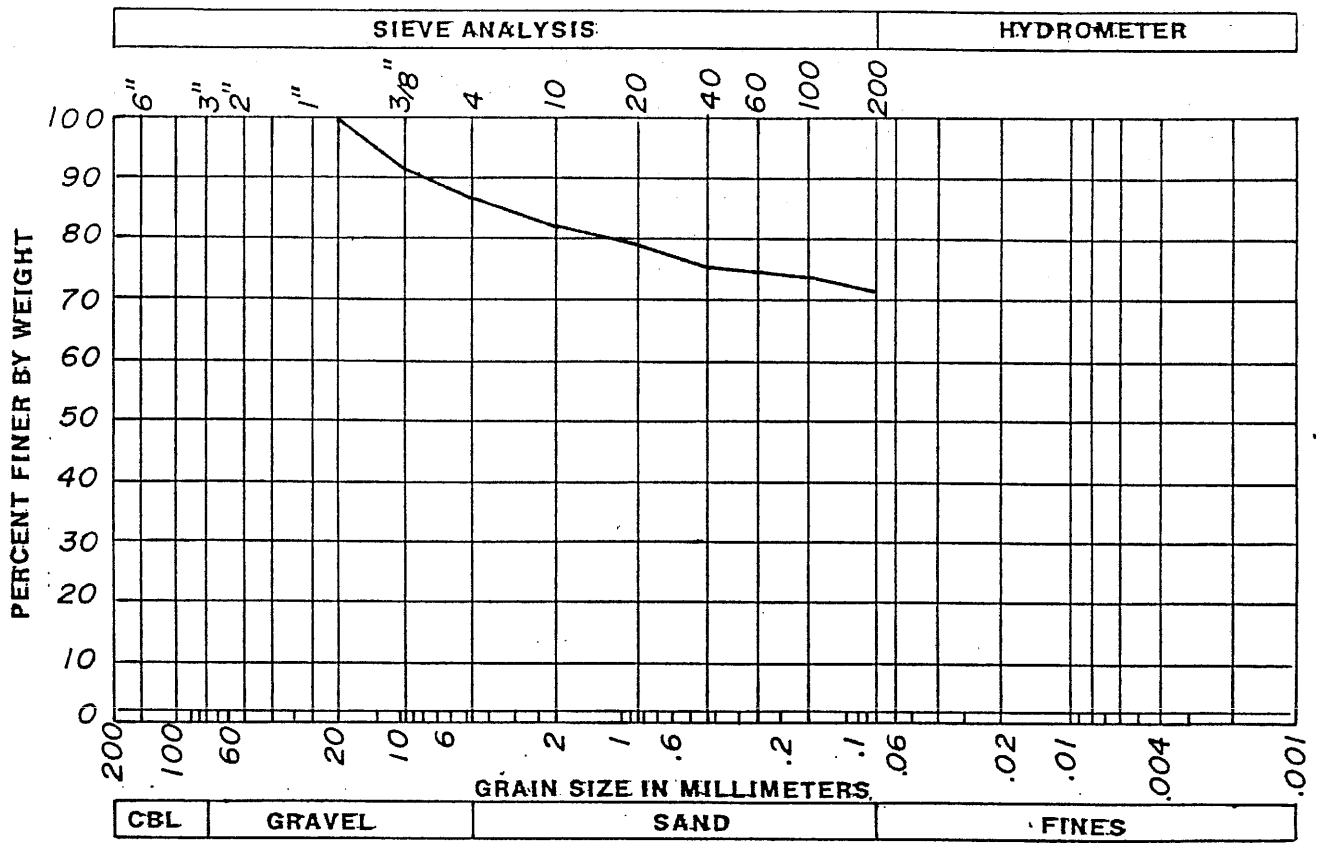
PERCOLATION RATE _____ (minutes/inch)

TEST RUN BETWEEN _____ FT AND _____ FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: _____ DATE: 8-15-89

Figure 20



PROJECT: Takotna MLTP

LOT: 6

TEST PIT: 2 DEPTH: 5'

UNIFIED SOIL CLASSIFICATION: ML

SOIL TEXTURAL CLASSSIFICATION: Nonplastic Sandy Silt

U.S. STANDARD SIEVE SIZE	PERCENT PASSING
3"	
2"	
1 1/2"	
1"	
3/4"	100
3/8"	92
#4	87
#10	82
#20	79
#40	76
#60	75
#100	74
#200	72

ALASKA SOIL TESTING AND ENGINEERING	GRAIN SIZE DISTRIBUTION	FIGURE 22

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☒ SOILS LOG

☐ PERCOLATION TEST

SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

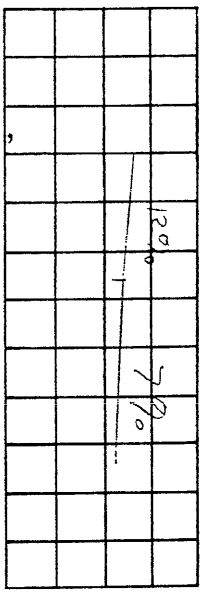
LEGAL DESCRIPTION: Lot 6 Test Pit 3 (TP 3)

DEPTH (FEET)	
1	
2	ML
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

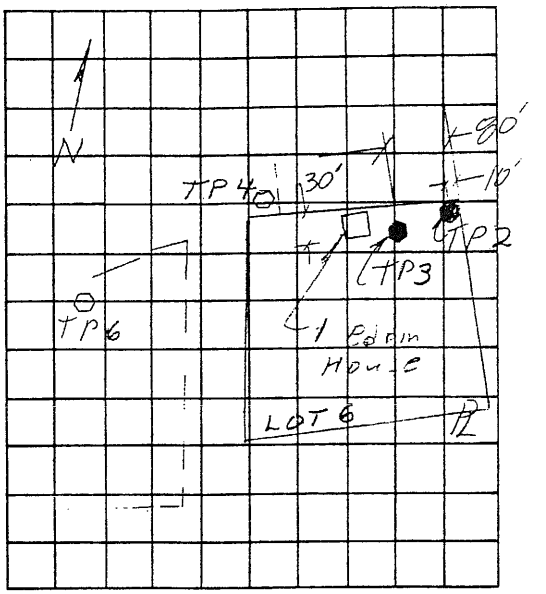
Brown SILT w/ occ. gravel, damp, medium stiff, low to med. plasticity

Bot of TP=7'

SLOPE



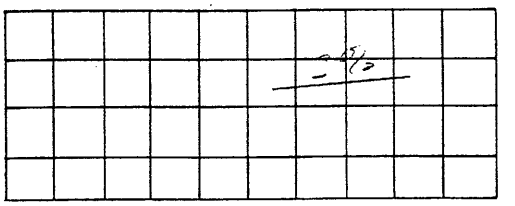
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop

PERCOLATION RATE _____ (minutes/inch)

TEST RUN BETWEEN _____ FT AND _____ FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: Mark Holum DATE: 8-15-89

Figure 21

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☐ SOILS LOG

☐ PERCOLATION TEST

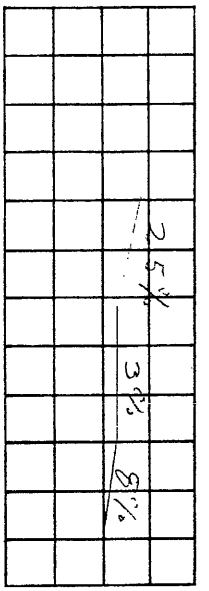
SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

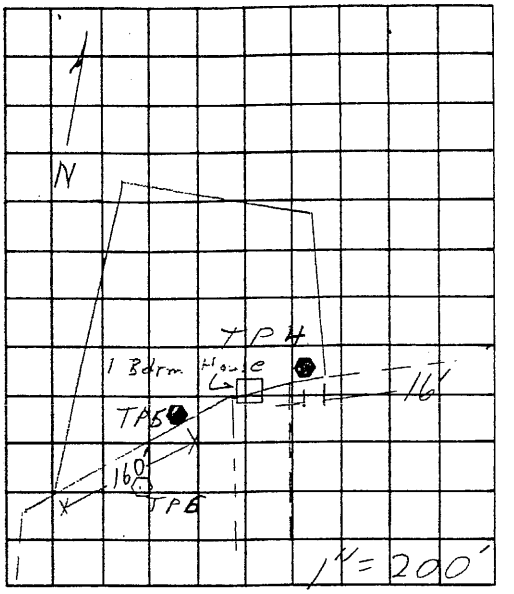
LEGAL DESCRIPTION: Lot 4 Test Pit 4 (TP 4)

DEPTH (FEET)	
1	GM — Brown SILTY GRAVEL, damp, dense
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	Bot of TP=11'
12	
13	
14	
15	
16	
17	
18	
19	
20	

SLOPE



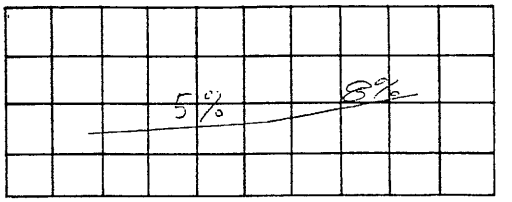
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
1	8-2-89	6:03	0	4.88	0 "
2		6:33	30	5.25	0.63
3		6:33	0	4 "	0 "
4		7:03	30	4.13"	0.13"
5		7:33	30	4.25"	0.12"

PERCOLATION RATE 240 (minutes/inch)

TEST RUN BETWEEN 2 FT AND 3 FT

COMMENTS House to be relocated on to property.

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: [signature] DATE: 8-15-89

Figure 9

ALASKA SOIL TESTING AND ENGINEERING
6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☐ SOILS LOG

☐ PERCOLATION TEST

SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

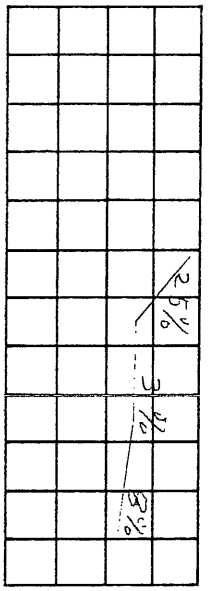
LEGAL DESCRIPTION: Lot 4 Test Pit 5 (TP 5)

DEPTH (FEET)	
1	
2	ML
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

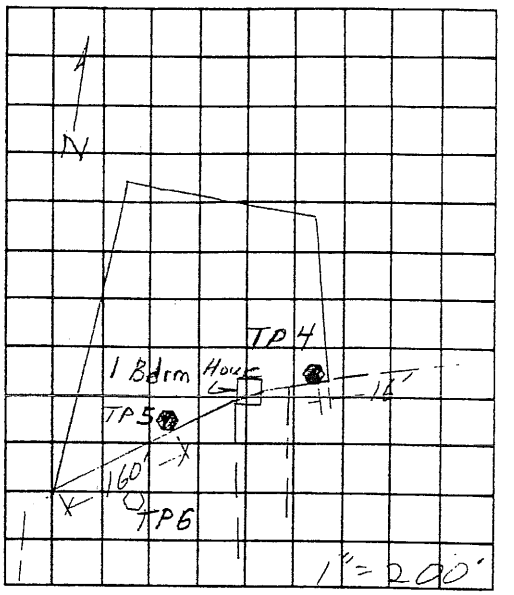
Brown SILT, damp, medium stiff, low plasticity

Bot of TP=9'

SLOPE



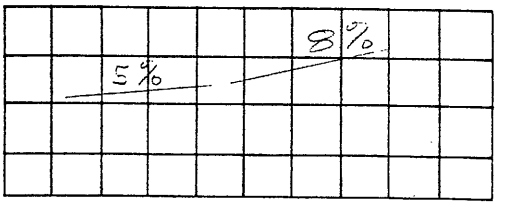
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop

PERCOLATION RATE _____ (minutes/inch)

TEST RUN BETWEEN _____ FT AND _____ FT

COMMENTS House to be relocated onto property.

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: Mark Holum DATE: 8-15-89

Figure 8

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☒ SOILS LOG

☒ PERCOLATION TEST

SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

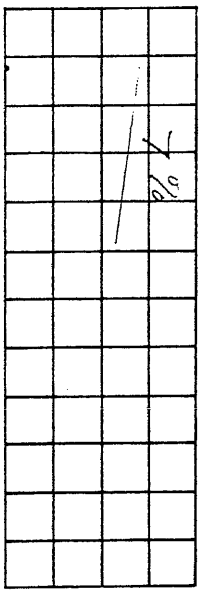
LEGAL DESCRIPTION: Lot 5 Test Pit 6 (TP 6)

DEPTH (FEET)

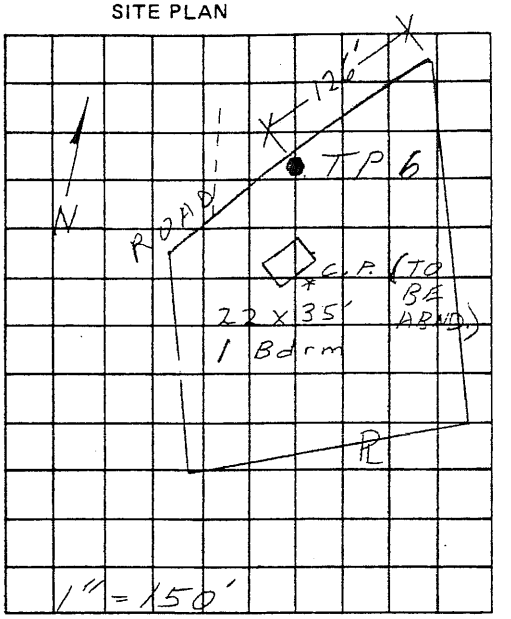
ML

Brown SILT, damp, medium stiff, l. to med. plasticity

SLOPE



SITE PLAN

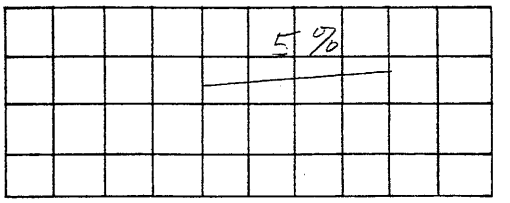


Bot of TP=10.5'

WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
1	8-2-89	6:53	0	6 "	0 "
2		7:23	30	6.75"	0.75"
3		7:53	30	7.12"	0.37"
4		8:23	30	7.5 "	0.37"

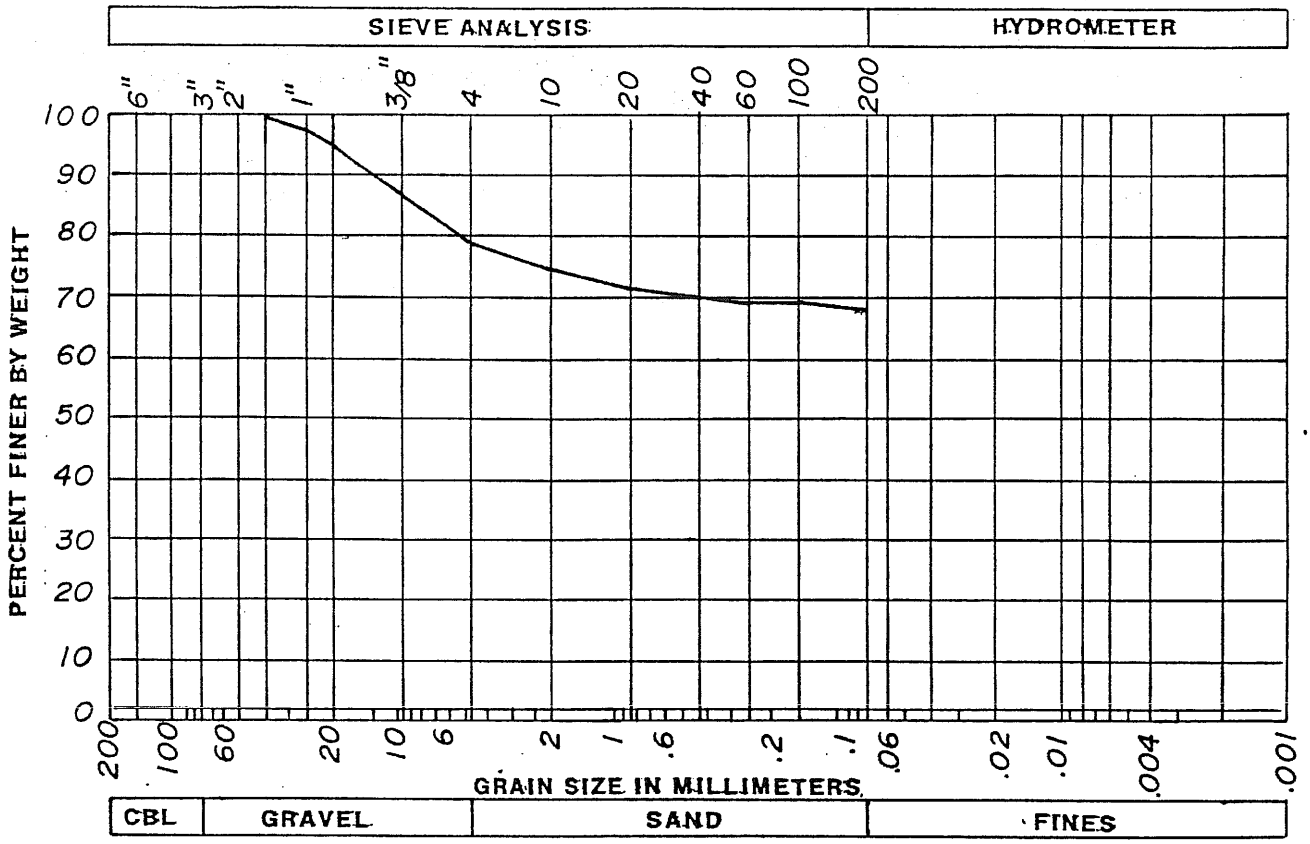
PERCOLATION RATE 80 (minutes/inch)

TEST RUN BETWEEN 3 FT AND 3 1/2 FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: _____ DATE: 8-15-89

Figure 14



PROJECT: Takotna MLTP

LOT: 5

TEST PIT: 6 DEPTH: 7'

UNIFIED SOIL CLASSIFICATION: ML

SOIL TEXTURAL CLASSSIFICATION: Nonplastic Sandy Silt

U.S. STANDARD SIEVE SIZE	PERCENT PASSING
3"	
2"	
1 1/2"	100
1"	97
3/4"	95
3/8"	87
#4	79
#10	74
#20	72
#40	70
#60	69
#100	69
#200	68

ALASKA SOIL TESTING AND ENGINEERING	GRAIN SIZE DISTRIBUTION	FIGURE 15

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☐ SOILS LOG

☐ PERCOLATION TEST

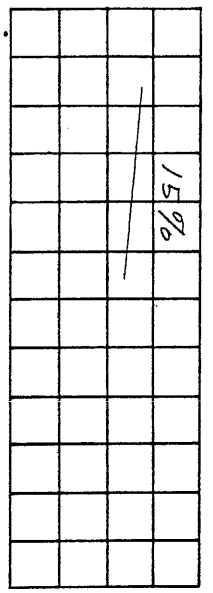
SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-1-89

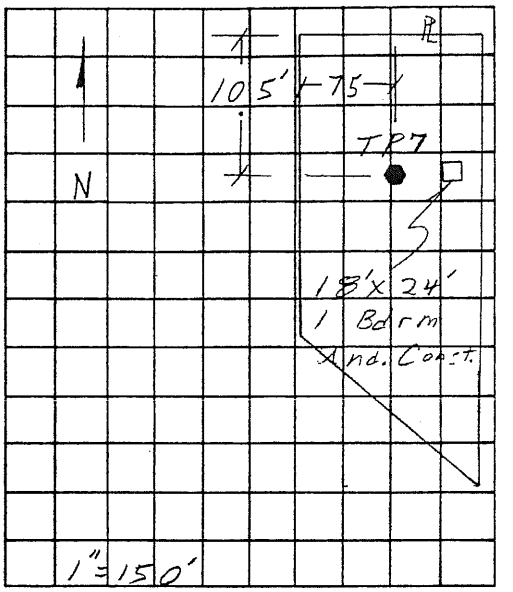
LEGAL DESCRIPTION: Lot 9 Test Pit 7 (TP 7)

DEPTH (FEET)	
1	ML — Brown GRAVELLY SILT w/org.
2	
3	
4	GP / GM — Brown GRAVEL, damp, angular, (weathered, fractured shale), dense
5	
6	
7	
8	
9	Bot of TP=9'
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

SLOPE



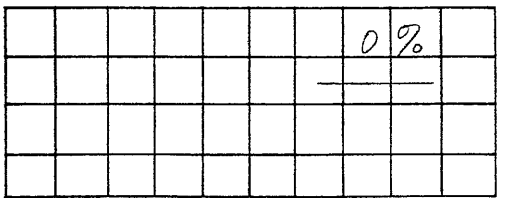
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
1	8-3-89	9:44	0	10.25"	0 "
2		9:54	10	12.0 "	1.75"
3		10:04	10	14.5 "	2.5 "
4		10:14	10	16.25"	1.75"
5		10:14	0	11.0 "	0 "
6		10:24	10	12.5 "	1.5 "
7		10:34	10	14 "	1.5 "
8		10:44	10	15.25"	1.25"

PERCOLATION RATE 8 (minutes/inch)

TEST RUN BETWEEN 3 FT AND 3 1/2 FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: _____ DATE: 8-15-89

Figure 27

ALASKA SOIL TESTING AND ENGINEERING
6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☐ SOILS LOG

☐ PERCOLATION TEST

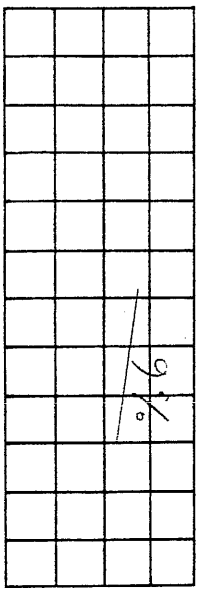
SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-2-89

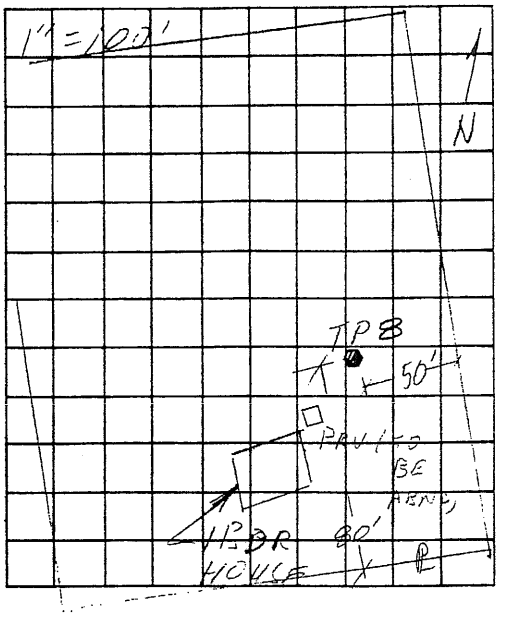
LEGAL DESCRIPTION: Lot 13 Test Pit 8 (TP 8)

DEPTH (FEET)		
1	ML	Brown SILT with occ. gravel, damp, stiff
2		
3		
4		
5	GP	Brown GRAVEL, damp, angular, (weathered, fractured shale), dense
6		
7		
8		
9		
10		
11		Bot of TP=11'
12		
13		
14		
15		
16		
17		
18		
19		
20		

SLOPE



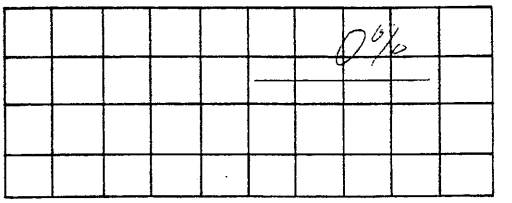
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
VISUAL RATING = 125 SQ. FT. / BDRM					
BETWEEN 3.0 - 11.0 FT.					

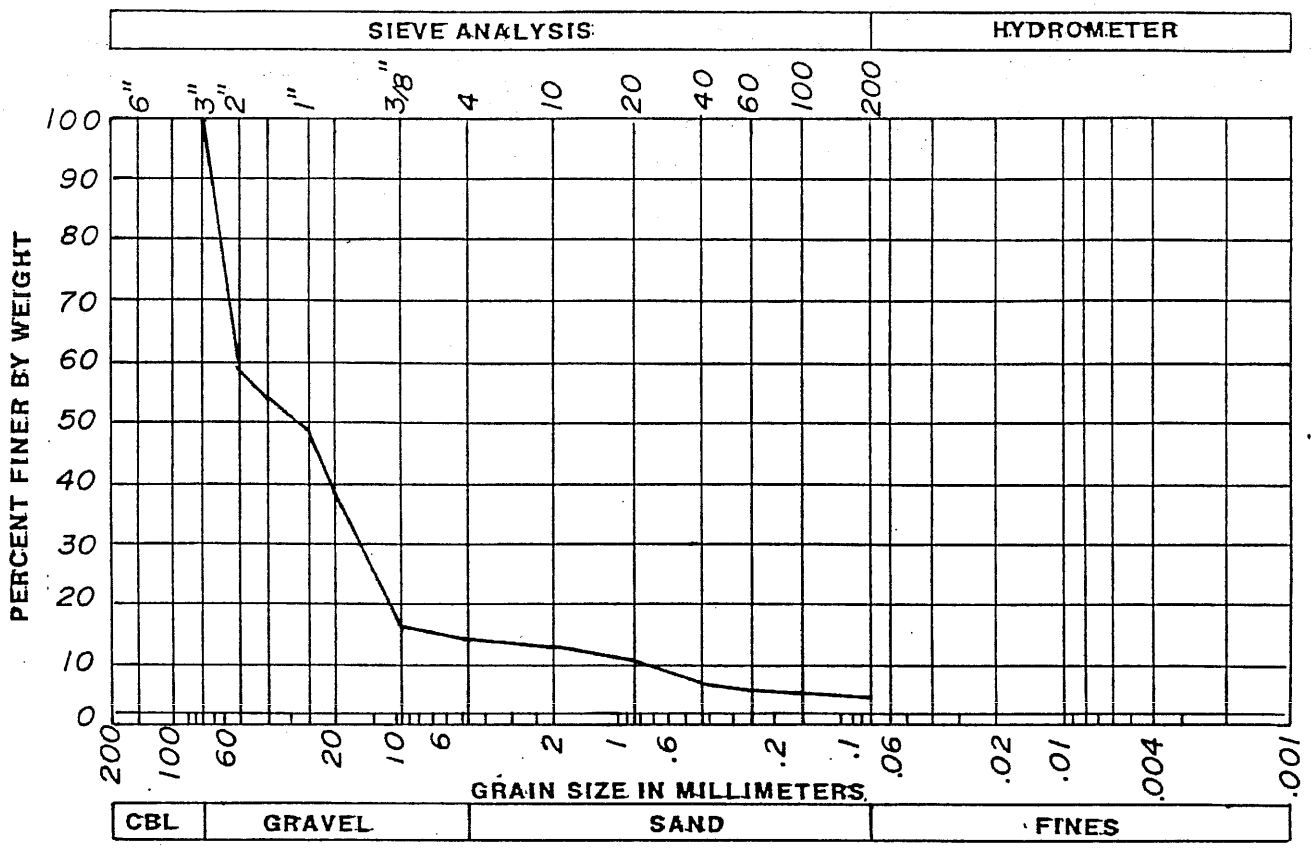
PERCOLATION RATE _____ (minutes/inch)

TEST RUN BETWEEN _____ FT AND _____ FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: _____ DATE: 8-15-89

Figure 35



PROJECT: Takotna MLTP

LOT: 13

TEST PIT: 8 DEPTH: 6'

UNIFIED SOIL CLASSIFICATION: GP

SOIL TEXTURAL CLASSSIFICATION: Poorly Graded Gravel

U.S. STANDARD SIEVE SIZE	PERCENT PASSING
3"	100
2"	59
1 1/2"	54
1"	48
3/4"	38
3/8"	17
#4	14
#10	13
#20	11
#40	8
#60	6
#100	5
#200	4

ALASKA SOIL TESTING AND ENGINEERING

GRAIN SIZE DISTRIBUTION

FIGURE 38

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☐ SOILS LOG

☐ PERCOLATION TEST

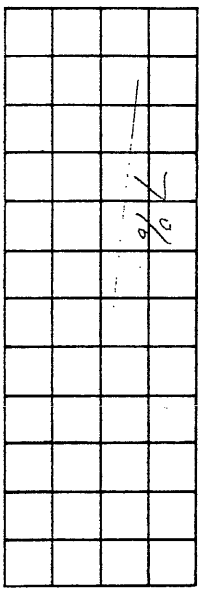
SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-2-89

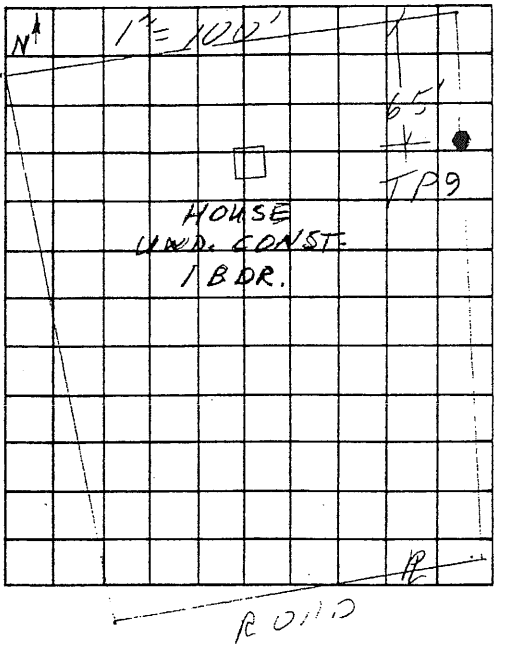
LEGAL DESCRIPTION: Lot 15 Test Pit 9 (TP 9)

DEPTH (FEET)		
1	ML	Brown SILT, damp, stiff
2		
3		
4		
5	GP	Brown GRAVEL, damp, angular, (weathered, fractured shale), dense
6		
7		
8		
9		
10		
11		
12		Bot of TP=11.5'
13		
14		
15		
16		
17		
18		
19		
20		

SLOPE



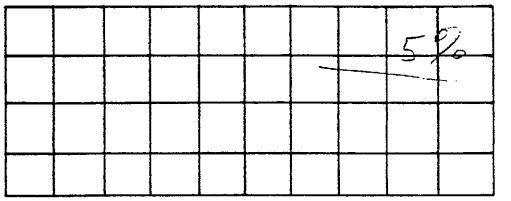
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
VISUAL RATING = 125 SQ. FT. / BDRM					
BETWEEN 1.5 - 11.5 FT.					

PERCOLATION RATE _____ (minutes/inch)

TEST RUN BETWEEN _____ FT AND _____ FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: Mark Holum DATE: 8-15-89

Figure 39

ALASKA SOIL TESTING AND ENGINEERING

6100 A Street, Anchorage, Alaska 99502
(907) 561-7453

☐ SOILS LOG

☐ PERCOLATION TEST

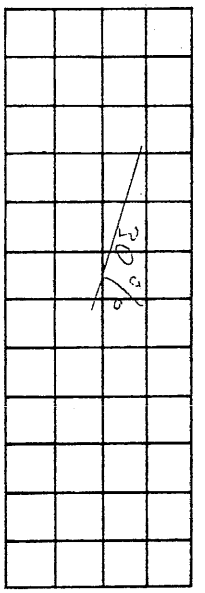
SOILS LOG – PERCOLATION TEST

PERFORMED FOR: Takotna MLTP DATE PERFORMED: 8-2-89

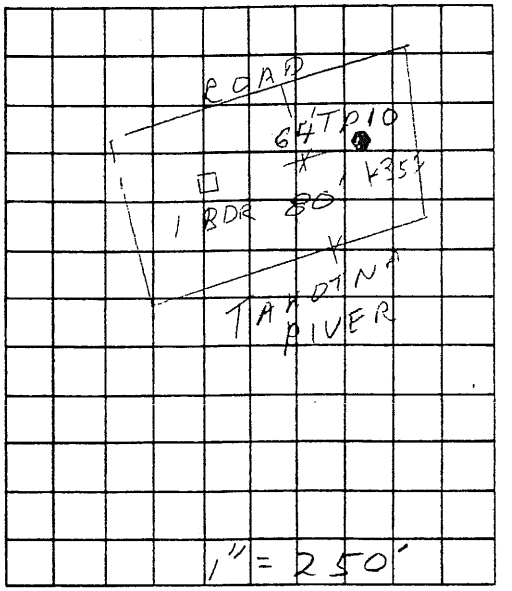
LEGAL DESCRIPTION: Lot 17 Test Pit 10 (TP 10)

DEPTH (FEET)		
1	ML	Brown SILT, damp, stiff
2		
3		
4	GP / GM	Brown GRAVEL, damp, angular, (weathered, fractured shale), dense
5		
6		
7		
8		
9		
10		
11		
12		Bot of TP=11.5'
13		
14		
15		
16		
17		
18		
19		
20		

SLOPE



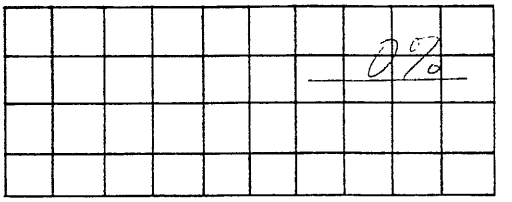
SITE PLAN



WAS GROUND WATER ENCOUNTERED? NO

IF YES, AT WHAT DEPTH? _____

SLOPE



Reading	Date	Gross Time	Net Time	Depth to Water	Net Drop
1	8-3-89	3:20	0	5 "	0 "
2		3:30	10	Dry/1.5	min.
3		3:40	10	Dry/1.5	min.
4		3:50	10	"	
5		4:00	10	"	
6		4:10	10	Dry/2	min.
7		4:20	10	Dry/2	min.

PERCOLATION RATE 0.3 (minutes/inch)

TEST RUN BETWEEN 4 FT AND 4 1/2 FT

COMMENTS _____

PERFORMED BY: Mark Holum, P.E. CERTIFIED BY: Mark Holum DATE: 8-15-89

Figure 44